

almost the same as *Salpinctes guadeloupensis*. Furthermore, in testing Mr. W. De W. Miller's criterion of distinctness for *Salpinctes guadeloupensis*¹ the ratio of wing-length to exposed culmen we get the following results in our series; *Salpinctes obsoletus obsoletus*, 3.4-4.2; *Salpinctes obsoletus neglectus*, 3.3-3.7; *Salpinctes guadeloupensis*, 3.0-3.5. It is thus evident that even this character inosculates. The Guadalupe Rock Wren and its subspecies should therefore stand as

***Salpinctus obsoletus guadeloupensis* Ridgway.**

***Salpinctus obsoletus proximus* Swarth.**

THE GEOGRAPHIC RACES OF *HEDYMELES MELANOCEPHALUS* SWAINSON.

BY HARRY C. OBERHOLSER.

THAT there are two subspecies of *Hedymeles*² *melanocephalus* is pretty generally recognized. Determination of the 245 specimens of this species in the United States National Museum, including the Biological Survey Collection, has, however, revealed the fact that the names and geographic ranges of these forms seem to be in need of readjustment.

The results of this study appear worth placing on record, which we shall endeavor to do in the following pages.

***Hedymeles melanocephalus melanocephalus* Swainson.**

Guiraca melanocephala SWAINSON, Philos. Mag., New Ser., I, June, 1827, p. 438 (Temascaltepec, Mexico, Mexico).

Fringilla epopæa LICHTENSTEIN, Preis-Verz. Säug., Vögel, Amphib., Fische, und Krebse Mex., 1830, p. 2 (Mexico).

¹The Auk, XXXVI, No. 2, April, 1919, p. 295.

²For the use of the generic name *Hedymeles* instead of *Zamelodia*, cf. Oberholser, 'The Auk,' XXXVI, No. 1, January, 1919, p. 115.

Fringilla xanthomaschalis WAGLER, Isis, 1831, col. 525 (Mexico).

Fringilla maculata AUDUBON, Birds Amer., folio ed., IV, 1837, pl. 373, figs. 2, 3, 4 (Columbia River).

Guiraca tricolor LESSON, Rev. Zool., II, April, 1839, p. 102 (Mexico).

Pitylus guttatus LESSON, Rev. Zool., II, April, 1839, p. 102 (Mexico).

[*Hedymeles melanocephalus*] var. *capitalis* BAIRD, in Baird, Brewer, & Ridgway's Hist. North Amer. Birds, II, 1874, p. 70 (Columbia River, Oregon).

Zamelodia melanocephala microrhyncha GRINNELL, Condor, II, No. 6, Nov. 16, 1900, p. 128 (Buckhorn Canyon, Sierra San Gabriel, Los Angeles Co., California).

Chars. subsp.—Size small; particularly of wing, tail, and bill; a post-ocular tawny streak usually present.

*Measurements.*¹—Male:² wing, 96.5–101.5 (average, 98.8) mm.; tail, 71.2–81.2 (77.5); exposed culmen, 15.2–17.8 (16.5); height of bill at base, 13.1–15.1 (14.1); tarsus, 22.6–24.9 (23.1); middle toe without claw, 16.5–18.3 (17.8).

Female:³ wing, 93.5–104.1 (average, 97.8) mm.; tail, 74.9–81.3 (78.2); exposed culmen, 15.8–20.1 (17.5); height of bill at base, 14.–15.8 (15); tarsus, 22.4–25.7 (23.6); middle toe without claw, 17.3–18.8 (17.8).

Type locality.—Tamascaltepec, Mexico, Mexico.

Geographic distribution.—Mexico and the Pacific Coast region of the United States and southern British Columbia. Breeds north in Mexico to northern Vera Cruz, Hidalgo, Guanajuato, and Oposura in north central Sonora, and on the Pacific Coast to southern British Columbia; west to Vancouver Island in British Columbia, western California, Lower California, Durango, Jalisco, Colima, and Michoacan; south to Guerrero and Oaxaca; and east to Oaxaca, Vera Cruz, Durango, northeastern Lower California, eastern California, southeastern Oregon, and west central Idaho. Winters north to southern Lower California, Mazatlan in Sinaloa and to the Valley of Mexico, and south to Oaxaca and to Chicharras in Chiapas.

Remarks.—The separation of *Hedymeles melanocephalus* into two subspecies was originally made on the basis of the difference existing between the birds of California and those of the Rocky

¹ Taken by Mr. Robert Ridgway and published in part in his "Birds of North and Middle America" (Bull. U. S. Nat. Mus., No. 50, part I, 1901, pp. 618–619). It is of importance to note that the measurement of the height of the bill is taken in a straight line from the base of the exposed culmen to the malar apex, not to the nearest point on the ramus of the mandible. This gives a substantially greater measurement than the latter and more common method, and the fact that Mr. Ridgway uses this measurement throughout the volume just quoted, which contains the *Fringillidæ*, persons who consult this book should bear in mind.

² Fifteen specimens, from California and Oregon.

³ Eight specimens, from California.

Mountain region of the United States. Mr. Ridgway found, however, that the birds breeding in Mexico are much smaller than those of the Rocky Mountains from Arizona to Wyoming, and, in fact, are close to California specimens. Subsequently, by authors who regard the California race as distinct, the Mexican birds were considered identical with those from the Rocky Mountains, and both together were treated as the typical form. Mr. Ridgway, apparently for the same reason, decided not to recognize two races. It is now evident from a reëxamination of the matter that, while the Rocky Mountain bird differs appreciably from that of California, that of Mexico, though somewhat intermediate, is so near in characters to the latter that it must be referred to this form instead of to the Rocky Mountain race. This close approximation in size may be readily seen from the following average measurements of 18 adult males from Mexico, which may be compared with the measurements of the present race above given: wing, 99.6; tail, 78.5; exposed culmen, 17.5; height of bill at base, 14.7; tarsus, 23.9; middle toe without claw, 17.3. The only other alternative is the recognition of three forms, which, in view of the slight and inconstant difference between birds from Mexico and California, seems certainly not desirable. The inclusion of the Mexican bird with that of California, of course, makes the latter a part of the typical form, and the name now used for it, *Hedymeles melanocephalus capitalis*¹ becomes consequently a synonym of *Hedymeles melanocephalus*; and the Rocky Mountain bird requires a new name.

It is of interest, moreover, to note in this connection that even if the former arrangement were to be continued, neither of the names that have been used for the California bird, *Hedymeles melanocephalus capitalis* Baird² and *Zamelodia melanocephala micro-rhyncha*³ is tenable, for both are long antedated by *Fringilla maculata* Audubon,⁴ which was based on a bird from the Columbia River. In fact, the type of *Hedymeles melanocephalus capitalis* Baird,

¹[*Hedymeles melanocephalus*] var. *capitalis* Baird, in Baird, Brewer, & Ridgway's History of North American Birds, II, 1874, p. 70.

² Loc. cit.

³ Grinnell, Condor, II, No. 6, Nov. 16, 1900, p. 128.

⁴ Birds Amer., folio ed., IV, 1837, pl. 373, figs. 2, 3, 4.

which is still in the United States National Museum, is a specimen collected by J. K. Townsend on the Columbia River, July 28, 1835, and received by Professor Baird from Audubon; and it is without much doubt the very specimen from which Audubon drew the male figure of *Fringilla maculata* for his folio plate.

Birds from the State of Guanajuato in Mexico are rather large, but are referable to the present form, and possibly represent nearly or quite its northern limit in this region. Specimens from the Cocopah Mountains in northeastern Lower California are practically typical, though they have a slightly longer wing than California birds. Examples from southeastern Oregon, northeastern Oregon, and western Idaho are rather large but clearly nearer the present race.

The 104 specimens examined come from the following localities:

California.—Baird, Shasta Co. (May 11, 21, and 23, 1883; June 9, 20, and 23, 1883); Ft. Tejon; San Francisco; Stanford University (June 6, 1900); San Dimas Canyon, Los Angeles Co. (June 27, 1915); Dominguez Rancho, Los Angeles Co. (April 22, 1915); Petaluma, Sonoma Co. (May 16, 1856); Hayward (July 26, 28, and 29, 1903; Aug. 8, 1901); Three Rivers (July 12, 1904); Honey Lake (June 16, 1877); Santa Barbara (June 27 and 29, 1875); Marin County (June 26, 1878); Calaveras (1852); Cloverdale (April 22, 1889); Santa Cruz (Aug. 17, 1891); Fyffe, El Dorado Co. (June 13, 1898); Ukiah (April 26, 1889); Laguna Station, San Diego Co. (May 5, 1894); Jacumba, San Diego Co. (May 23 and 27, 1894); Palo Alto (May 30, 1898); Hayden's Ranch, San Diego Co. (May 31, 1894); Red Bluff (May 2, 1884); Riverside (April 20, 1889); San Diego (April 11, 1882); Laguna, San Diego Co. (June 13, 1894); Cameron Ranch, San Diego Co.; Heninger Flats, San Gabriel Mts. (July 8, 1905); Millard Canyon, San Bernardino Mts. (May 8, 1909); Shepherd Canyon, Argus Range (April 26, 1891); Maturango Spring, Argus Range (May 14 and 15, 1891); Chieo (Aug. 5, 1904); Paraiso Springs (July 7, 1902); Camp Badger (May 17, 1894).

Idaho.—South Fork of Salmon River, 12 miles east of Warren (Aug. 2, 1913); Weiser (June 13, 1913); Idaho City (June 17, 1910).

Oregon.—Rockville, Malheur Co. (July 15, 1915); Eugene

(June 18 and 19, 1914); Tillamook (July 3, 1897); Haycreek (May 17, 1915); Portland (July 8, 1897); Homestead (June 6, 1916).

Washington.—Mt. St. Helens (Aug. 10, 1897).

Colima.—Plains of Colima (October, 1863; January, 1863).

Durango.—Chacala (March 1, 1899); El Salto (July 25, 1898).

Guanajuato.—Guanajuato; Cupataro.

Guerrero.—Omitlán (May 25, 1903).

Hidalgo.—El Chico (March 23 and 24, 1893).

Lower California.—East base of Cocopah Mts. (April 13, 1905); Seven Wells (April 16, 1894); San Ysidro Ranch (June 30, 1894); San José (February, 1860); Pichilingua Bay (Jan. 23, 1882); Gardner's Laguna, Salton River (April 24, 1894); Nachoguero Valley (June 1 and 5, 1894).

Mexico.—Tlalpam (Dec. 24, 1892); Lerma (July 3, 1904).

Michoacan.—Patzcuaro (July 20, 1892).

Morelos.—Huitzilac (Dec. 28, 1892; Jan. 1, 1893); Tetela del Volcan (Feb. 10, 1893); Cuernavaca (Jan. 5, 1893).

Oaxaca.—Oaxaca (June 21, 1894).

Puebla.—Chalehicomula (April 13, 1893); Mt. Orizaba (April 26, 1893); Orizaba; Puebla.

Sinaloa.—Mazatlan (February, 1866).

Sonora.—Near Oposura (April 14, 1887).

Tlaxcala.—Huamantla (May 11, 1893).

Vera Cruz.—Jico (July 14, 1893); Mirador, near Vera Cruz (June, 1864).

***Hedymeles melanocephalus papago*, subsp. nov.**

Zamelodia melanocephala melanocephala Auct. nec SWAINSON.

Chars. subsp.—Similar to *Hedymeles melanocephalus melanocephalus*, but larger, especially the wing, tail, and bill; postocular stripe usually absent.

Description.—Type, adult male, No. 129086, U. S. Nat. Mus.; Santa Cruz River, west of Patagone Mountains, Arizona, June 21, 1893; Frank X., Holzner, original number, 1634. Pileum, upper cervix, back, wings, and tail black, the wing-quills and the outer webs of the rectrices somewhat brownish; streaks on the cervical collar, on back, rump, and short upper tail-coverts, ochraceous tawny; long upper tail-coverts black tipped with

grayish white; the broad tips of the median wing-coverts, terminal spot on the outer webs of each of the greater coverts, a conspicuous wing speculum on the eight outer primaries (on both webs except on the outermost feather), and a terminal spot on the outer webs of each of the secondaries and tertials, white; subterminal edging on sinuated portion of the external webs of four outer primaries (excepting the outermost), and large (18 mm. long) terminal spots on the inner webs of the two outermost rectrices, also white; chin black; throat and jugulum like cervix; sides of body, of breast, and of upper abdomen, together with flanks, light ochraceous tawny, palest posteriorly; middle of breast and of upper abdomen rather dull lemon chrome; lower abdomen white; crissum ochraceous buff, the longest lower tail-coverts ochraceous buff; thighs deep fuscous, spotted with white; lining of wings lemon chrome.

Measurements.¹—Type: length (in flesh), 221 mm.; extent (in flesh), 336; wing, 102.5; tail, 85.5; exposed culmen, 21.5; height of bill at base, 15.5; tarsus, 25; middle toe without claw, 17.5.

Male:² wing, 99.3–109.2 (average, 103.1) mm.; tail, 76.2–86.9 (81.8); exposed culmen, 17.5–20.3 (18.5); height of bill at base, 15.–17.5 (15.5); tarsus, 22.9–25.4 (24.1); middle toe without claw, 16.3–19.1 (17.8).

Female:³ wing, 96.5–104.6 (average, 99.8) mm.; tail, 74.2–86.4 (79.3); exposed culmen, 18.–20.1 (19.1); height of bill at base, 15.–16.3 (15.8); tarsus, 22.9–25.7 (23.9); middle toe without claw, 17.3–18.5 (17.5).

Type locality.—Santa Cruz River, west of the Patagone Mountains, near the Mexican Boundary Line, southern Arizona.

Geographic distribution.—Mexico and the west central portion of the United States, and southern Saskatchewan. Breeds north to northwestern North Dakota, northeastern Montana, and southwestern Saskatchewan; west to eastern Idaho, western Nevada, western Arizona, and La Chumata, near Opodepe, north central Sonora; south to the last mentioned locality, southeastern Coahuila, and southwestern Tamaulipas; and east to southwestern Tamaulipas, central western Nuevo Leon, central western Texas, eastern New Mexico, eastern Kansas, central Nebraska, and central North Dakota. Winters from the State of Durango in Mexico to Puebla and probably to southern Mexico. Migrates east to eastern Nebraska and central Texas.

Remarks.—Color is much less important than size for the characterization of this race, and particularly for the identification of specimens, because such color differences as exist are not very

¹ Taken, except those of the type, by Mr. Robert Ridgway. The same remarks apply to these measurements as to those of *Hedymeles melanocephalus melanocephalus*, for which see footnote on page 409.

² Twenty-four specimens, from Arizona, New Mexico, Nevada, Utah, Colorado, Wyoming, and North Dakota.

³ Seven specimens, from Arizona, New Mexico, Utah, and Wyoming.

satisfactory. The absence of a tawny postocular stripe in *Hedymeles melanocephalus papago* is the best color character. The tendency of birds from the Rocky Mountains to have the crown solidly black instead of with a tawny median stripe is very inconstant, and, besides, is shared by Mexican birds, and is thus of no diagnostic value. The difference in the depth of the color on the throat, breast, sides, rump, and crissum, and the width of the white tips on the median coverts, mentioned by Dr. Grinnell in the original description of his *Zamelodia melanocephalus microrhyncha*,¹ prove by examination of our large series to be merely individual variations.

Breeding birds from Jaumave, Tamaulipas; Sierra Guadalupe, Coahuila; and Cerro de la Silla, Nuevo Leon, are practically typical of the present subspecies; and a single female from Atlixco, Puebla, without date, but which, of course, represents a winter record, is also typical. Specimens from Pyramid Lake, the Monitor Mountains, Toyabe Mountains, and Mountain City, all in Nevada, are a little small but much nearer *Hedymeles melanocephalus papago* than to the typical race. The same remarks will apply to birds from localities in southeastern Idaho.

An adult male (No. 49757, U. S. Nat. Mus.) from Camp Grant, Arizona, taken, May 14, 1867, by Dr. Edward Palmer, exhibits a peculiar individual plumage variation in the color of the upper throat, which is bright yellow.

As explained under *Hedymeles melanocephalus melanocephalus*, all the names applied to the species pertain to that race, since we now refer the Mexican representatives to the same subspecies as those from California.

Of this race 141 specimens have been examined, from the subjoined localities:

Arizona.—Fort Huachuca (May 9, 1892; July 22, 1893); Huachuca Mts. (July 26, 27, 28, and 31, 1893; Aug. 17 and 20, 1893; Sept. 5, 1893; July 12, 1888); Grand Canyon of the Colorado (May 14, 1884); Fort Whipple (July 21, 1865; Aug. 10, 1864); San Pedro Slope of Santa Catalina Mts., Pinal Co. (May 5, 1885); Santa Catalina Mts. (May 31, 1889); Squaw Peak, Verde Mts.

¹ 'Condor,' II, No. 6, Nov. 16, 1900, p. 128.

(May 9, 1888); Apache (Sept. 13, 1873); Fossil Creek, Yavapai Co. (June 20, 1885); Pinal County (Sept. 5 and 16, 1884; Aug. 19, 1884); Bowie (Aug. 15, 1874); Willow Spring (July 12, 1874); Camp Grant, 60 miles east of Tucson (May 14, 1867); Tucson (May 15, 1884); Fort Verde (Sept. 14, 1886); Oak Creek, 25 miles north of Fort Verde (Aug. 13, 1885); Santa Rita Mts. (June 8 and 11, 1884; July 1, 1884); San Francisco Mt. (Aug. 10, 1889; Sept. 5, 1889); Ash Creek, Graham Mts. (May 9 and 11, 1914); Rice, on San Carlos Indian Reservation (May 18, 1916).

Colorado.—Colorado Springs; Pueblo County (May 24, 1893; May 25, 1892); Pueblo (Aug. 1, 1874); Canyon of the Grand River (Sept. 14, 1889); East Plum Creek (June 4, 1873); Garland (June 19, 1873).

Idaho.—Shelley (July 29, 1911; Aug. 4, 1911); Pocatello (June 16, 1911); American Falls (May 27, 1911; June 4 and 5, 1911); Blackfoot (July 8, 1890); Idaho City (June 17, 1910); Blue Spring Hills, Oneida Co. (May 31, 1916).

Montana.—Benton (Aug. 7 and 8, 1910); Junction of Pilgrim Creek and Powder River, 10 miles northeast of Broadus (June 12, 1916); 10 miles southwest of Broadus (June 20, 1916); 25 miles southwest of Broadus (June 21, 1916); Highwood Mts. (Aug. 23, 1910); Fort Keogh (June, 1889; June 7, 1889); Reese Creek (Aug. 11, 1888); near Hillsdale (Aug. 15, 1888); Glasgow (June 18, 1910).

North Dakota.—Buford (May 30, 1910); Cannonball (Aug. 17, 1915); Fort Totten (July 13, 1915); Fort Union (June 26, 1843); Fort Rice (June 16, 1873).

New Mexico.—Southeastern slope of Capitan Mts. (July 15, 1903); northwestern foothills of Capitan Mts. (June 27, 1903); Willis (July 15, 1903); Rinconada (May 6 and 8, 1904); north slope of Animas Peak, Animas Mts. (July 29 and 30, 1908; Aug. 6, 1908); Bear Ridge, Zuni Mts. (June 19, 1909); Fort Wingate (June 29, 1905; Sept. 14, 1888); Pecos Baldy (Aug. 5, 1903); Oak Canyon, Raton Range (Sept. 2, 1903); Capitan (June 27, 1903); Red River at 9500 feet altitude (Aug. 16, 1904); Dog Spring, Grant Co. (May 24, 1892); west side of San Luis Mts., Mexican Boundary Line (July 14 and 19, 1892); east side of San Luis Mts., Mexican Boundary Line (June 23, 24, 25, and 26, 1892).

Nevada.—Pyramid Lake (June 12, 1889); South Twin River, Toyabe Mts. (Aug. 19, 1915); Jett Canyon, Toyabe Mts. (Aug. 13, 1915); Monitor Mts., 25 miles southwest of Eureka (June 9, 1898); Mountain City (June 12 and 14, 1898).

Texas.—Marathon (May 15, 1901); Pine Canyon, Chisos Mts. (June 3, 1901).

Utah.—Salt Lake City (May 24, 1869); Parley's Park, Wasatch Mts. (July 29, 1869); Ogden (June 7 and 8, 1872); Provo (July 29 and 30, 1873; July 30, 1872).

Wyoming.—Fort Steele (May 23, 24, and 25, 1911); Greybull (June 7, 10, and 13, 1910); Fort Bridger (May 24, 1858; June 1, 1858); Laramie; Fort Laramie (May 28 and 31, 1878); Sage Creek, fork of Stinking Creek (June 13, 1860).

Coahuila.—Sierra Guadalupe (April 27, 1902).

Durango.—Chacala (Feb. 27, 1899).

Nuevo Leon.—Cerro de la Silla (March 24, 1902).

Puebla.—Atlixco (1883).

Sonora.—La Chumata, near Opodepe (May 27, 1905).

Tamaulipas.—Jaumave (June 6, 1898).